Title of the research

Linking community to public primary health center for management of hypertension: An implementation study of an integrated digital health application in rural Nepal

Author’s Name and Affiliation

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Background and Objective

Background:

Nearly 1 in 4 people in Nepal suffer from HTN, and less than 5% of HTN patients have the condition under control.

Challenges:

Geographic barriers, low awareness, and systemic gaps in care.

Through remote treatment, improved patient engagement, and self-monitoring, digital health solutions have the potential to improve the management of HTN.

Objective:

To assess feasibility, adoption, and effectiveness of an Android-based mobile application integrated with Nepal’s primary healthcare system.

Methodology

Study design:

Pre and post-intervention cross-sectional mixed method design.

Study site:

5 HPs in Panchkhal municipality & Bethanchok rural municipality of Kavrepalanchok district, Bagmati province, Nepal.

Participants:

- 27 female community health volunteers (FCHVs), 21 frontline healthworkers (FLHWs), 294 community members (aged 40+).
- Physicians, government/NGO stakeholders.

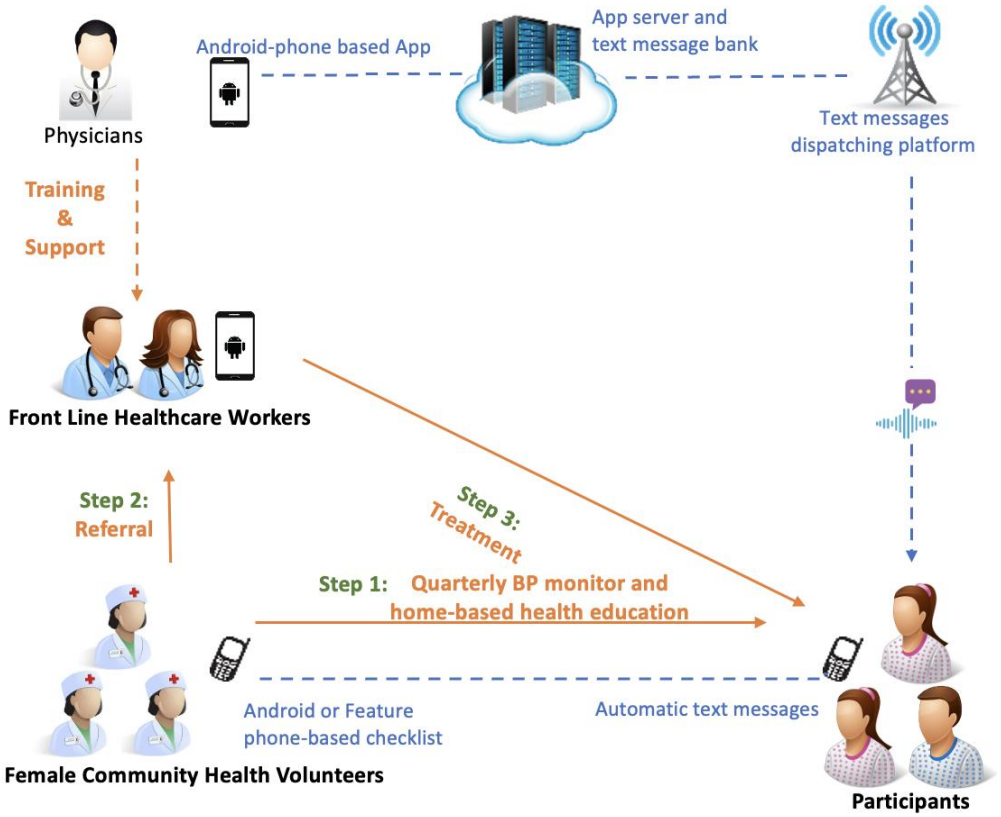
Intervention:

- Android mobile application for BP screening, referrals, and patient management.
- Training for FCHVs/FLHWs; automated text reminders for patients.

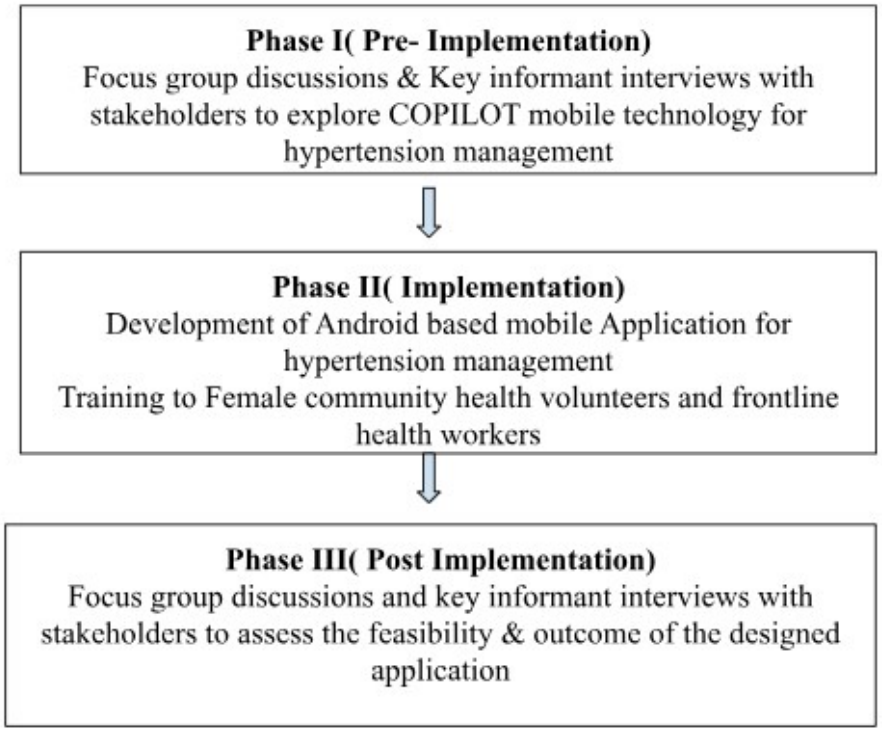
Data Collection:

- Backend data from the application, physician surveys, KIIs, and FGDs.

Intervention design of Hypertension Application



Study flowchart



Results

Implementation Outcome with the RE-AIM Framework

Adoption:

All HPs (n=10), 90% FCHVs (27 out of 30) &100% FLHWs (n=21).

FCHVs screened about 11 community people/day from 4-5 households & provided health education referring to the contents from the application.

FLWHs used the application to receive reports and manage patients.

Qualitative data showed the mHealth intervention was well adopted with significant change in FCHV's work.

Implementation:

FCHVs referred previously diagnosed and suspected cases to FLHWs following the protocol.

Reach:

27 FCHVs screened 294 community people of 10 wards demonstrating a wide community reach. 46.6% of the screened individuals were aged at 60 years or older.

53 patients with HTN on medication and 40 patients with HTN not under medication received 6 rounds of text messages.

Effectiveness:

Out of 294 participants screened, 59.9% of participants (n=176) with diagnosed or suspected HTN were referred by FCHVs. Of the referred participants, 54.0% (n=95) visited the HPs.

50 new cases were diagnosed.

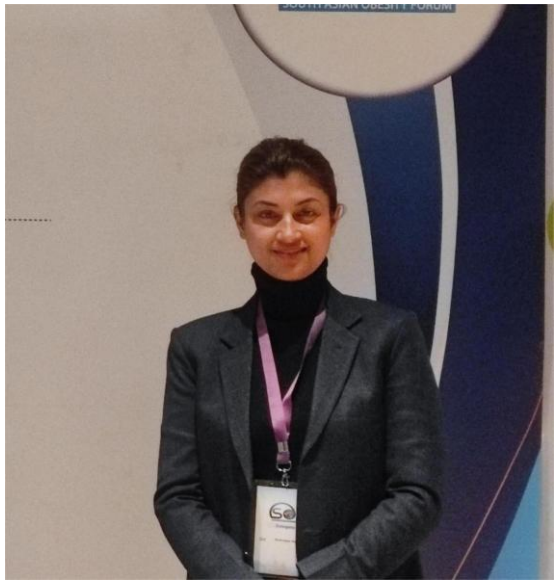
Maintenance:

A one-day refresher training was provided to all 27 FCHVs (n=27) and 21 FLHWs one month after the implementation of the program.

Conclusion

Takeaway Messages:

1. **Feasible**: mHealth apps can bridge gaps in HTN care in low-resource settings.
2. **Scalable**: High adoption by FCHVs/FLHWs supports task-shifting.
3. **Challenges**: Address medication supply, internet access, and physician training.
4. **Policy Implication**: Integrate mHealth into Nepal's NCD programs with government support.



Ms. Ashraya Acharya is a public health researcher specializing in NCDs, particularly HTN and diabetes management in Nepal. She collaborates with international partners to implement community-based interventions, leveraging mobile health technology to improve primary care services.